GT CDAIT
Biweekly IoT News Digest (04/21 – 1)

February 2021 Highlights

COVID-19 & THE INTERNET OF THINGS

See some perspectives gathered by CDAIT on the use of IoT technologies in preventing and monitoring COVID-19 like infectious diseases & pandemic impact on IoT – as of 04/15/2021 – 762 entries:
https://devcdait.gatech.edu/sites/default/files/ovid-19_iot_january_2020_april_15_2021.pdf

GOVERNANCE & THE INTERNET OF THINGS

Patrick Tucker, "**Electric Cars, Smart Refrigerators Pose Cyber Risk To US Utilities, GAO [Government Accountibility Office] Finds,**" Defense One, April 1, 2021
https://www.defenseone.com/technology/2021/04/electric-cars-smart-refrigerators-pose-cyber-risk-us-utilities-gao-finds/173094/

Board of Governors of the Federal Reserve System, Bureau of Consumer Financial Protection, Federal Deposit Insurance Corporation, National Credit Union Administration, and Office of the Comptroller of the Currency are gathering information and comments on financial institutions' use of artificial intelligence (AI), including machine learning (ML), Federal Register, March 31, 2021
https://www.federalregister.gov/documents/2021/03/31/2021-06607/request-for-information-and-comment-on-financial-institutions-use-of-artificial-intelligence

Hope Krebs, "**J5 Countries (Including the U.S. and UK) Are Laser-Focused on FINtech Companies,**" Duane Morris Techlaw, March 26, 2021 (Global Tax Enforcement [J5] coordinates fight against tax crimes)
https://blogs.duanemorris.com/techlaw/2021/03/26/j5-countries-including-the-u-s-and-uk-are-laser-focused-on-fintech-companies/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=LinkedIn-integration

US Department of Agriculture (USDA)'s Animal and Plant Health Inspection Service (APHIS) Announces Intent to Pursue Rulemaking on Radio Frequency Identification (RFID) Use in Animal Disease Traceability - see March 23, 2021 USDA announcement:
https://www.aphis.usda.gov/aphis/newsroom/news/sa_by_date/sa-2021/rfid-traceability-rulemaking

IoT News and Market Reports
(First Half of April 2021)

- Selected **IoT-related announcements and featured activities/topics in the first half of April 2021** gathered by CDAIT from governments; agencies; consortia; alliances; associations; standards, research and other similar groups around the world – 15 entries – See:
https://devcdait.gatech.edu/sites/default/files/iot_news_filings_april_2021_first_half.pdf

- Sample list of **IoT-related market reports published in the first half of April 2021** gathered by CDAIT– 71 entries – See:
https://devcdait.gatech.edu/sites/default/files/iot_market_reports_april_2021_first_half.pdf

Georgia Tech IoT-related Info/Research Noticed by CDAIT

- Patrick B.M.Fahim, Rowoon An, Jafar Rezaei, Yusong Pang, Benoit Montreuil and Lorant Tavasszy, "**An information architecture to enable track-and-trace capability in Physical Internet ports**," Computers in Industry, Volume 129, August 2021, 103443, available online March 25, 2021 https://doi.org/10.1016/j.compind.2021.103443

- Jianjun Luo, Wenchao Gao, and Zhong Lin Wang, "**The Triboelectric Nanogenerator as an Innovative Technology toward Intelligent Sports,**" Advanced Materials, published online March 24, 2021 https://doi.org/10.1002/adma.202004178

- Sooji Ha, Daniel J. Marchetto, Sameer Dharur and Omar I. Asensio, "**Topic Classification of Electric Vehicle Consumer Experiences with Transformer-Based Deep Learning,**" Patterns, available online January 22, 2021 https://doi.org/10.1016/j.patter.2020.100195.

OF NOTE: The National Security Agency (NSA), working with others, is creating new unclassified 5G security guidance to be published this spring (2021) based on work by the Enduring Security Framework (ESF), which is a public-private partnership between the NSA, Defense Department, Department of Homeland Security (specifically, CISA), Intelligence Community, and companies within the US IT and defense industrial base sectors – see Brad D. Williams, "**NSA About To Release Unclassified 5G Security Guidance,**" Breaking Defense, April 7, 2021 https://breakingdefense.com/2021/04/nsa-about-to-release-unclassified-5g-security-guidance/

Special Reading Suggestions

- John Bigelow, "**Ultimate IoT implementation guide for businesses,**" IoT Agenda, April 14, 2021 https://internetofthingsagenda.techtarget.com/Ultimate-IoT-implementation-guide-for-businesses

- John Boruvka, "**As Reliance On IoT Grows, Are You Prepared For The Risks?,**" JDSupra, April 12, 2021 https://www.jdsupra.com/legalnews/as-reliance-on-iot-grows-are-you-5612332/

- Aaron Ganick, "**CEOs Need to Take Leadership on IoT in 2021 to Drive Bottom-Line Benefits,**" IoT Business News, April 7, 2021 https://iotbusinessnews.com/2021/04/07/36012-ceos-need-to-take-leadership-on-iot-in-2021-to-drive-bottom-line-benefits/

- CRN, "**2021 Internet Of Things 50: The Bright Lights Of IoT,**" [50 companies across connectivity, hardware, industrial IoT, security and software,] April 5, 2021 https://www.crn.com/news/internet-of-things/2021-internet-of-things-50-the-bright-lights-of-iot

- Julia Borgini, "**Top 9 IoT business models for 2021,**" IoT Agenda, April 5, 2021 https://internetofthingsagenda.techtarget.com/tip/Top-9-IoT-business-models

Selected IoT Perspectives
The Internet of Things and Smart Homes

- KTBS (ABC, Shreveport, LA), "**Home smart devices part of the 'Internet of things',**" (video, 3'20), April 8, 2021 https://www.ktbs.com/home-smart-devices-part-of-the-internet-of-things/video_4fdf70d8-c200-5807-b74c-f8a4f68b1335.html

- Fanyu Lin, "**How to ensure that connected homes are for everyone,**" World Economic Forum, December 9, 2020 https://www.weforum.org/agenda/2020/12/how-to-ensure-that-future-connected-homes-are-for-everyone/

- Stacey Higginbotham, "**The smart home will change insurance, but it will take time,**" Stacey on IoT, November 10, 2020 https://staceyoniot.com/the-smart-home-will-change-insurance-but-it-will-take-time/

Research background info: Wonyoung Choi, Jisu Kim, SangEun Lee, and Eunil Park, "**Smart home and Internet of Things: A bibliometric study,**" Journal of Cleaner Production, available online March 30, 2021, 126908, In Press, Journal Pre-proof https://doi.org/10.1016/j.jclepro.2021.126908 – Kothandaraman D., A. Harshavardhan, V. Manoj Kumar, D. Sunitha and Seena Naik Korra, "**BLE in IoT: Improved link stability and energy conservation using fuzzy approach for smart homes automation,**" Materials Today: Proceedings, Available online January 23, 2021, In Press, Corrected Proof https://doi.org/10.1016/j.matpr.2020.12.378

Some leading **IoT messaging and communications protocols for the Smart Home** [alphabetical order]: AMQP (Advanced Message Queuing Protocol), Bluetooh, Bluetooth Low Energy (BLE), Brick Schema, Connected Home over IP (CHIP), Constrained Applicaion Protocol (CoAp), Data Distribution Service (DDS), EnOcean, Project Haystack, HomeGrid Forum (HGF), IPv6 over Low-Power Wireless Personal Area Networks (6LoWPAN), KNX, MQTT (Message Queue Telemetry Transport), Near Field Communicatio (NFC), Open Connectivity Foundation (OCF), Thread, Extensible Messaging and Presence Protocol (XMPP), Zigbee, Z-wave, Wifi, Wifi Direct, Wifi HaLow, Wifi 6E, and other open source home automation platforms (examples here).

Note: some standards listed above have a broad range of applications beyond the home environment as do other standards that may be helpful in home automation such as but not limited to cellular standards (3G, 4G, 5G), ISO standards for IoT interoperability, licensed (enhanced machine-type communication (eMTC), Narrow Band Internet of Things (NB-IoT), Long Term Evolution for Machines (LTE-M)) and unlicensed (Fraunhofer Institute for Integrated Circuits's MIOTY, LoRa), Sigfox) Low Power Wide Area Network (LPWAN), and OMA Specworks (e.g., LWM2M).

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